

Market Failure — Worksheet

The five sources · externalities · welfare loss and welfare gain · public goods and free riders · information gaps · moral hazard · market bubbles

Name: _____

Class: _____

Date: _____

DEFINE an external cost · **CALCULATE** a total external cost, a welfare loss and a social benefit · **DRAW** a marginal analysis diagram that shows a welfare gain · **ANALYSE** how speculation can lead to a market bubble · **DISCUSS** the effects of a fall in the prices of flats (homes) on producers and workers · **EVALUATE** whether the private sector will provide a public good

Sitting 1 — Topic practice

30 marks

MULTIPLE CHOICE Task 1 — Six questions on market failure

6 marks

Choose one answer for each question.

1. Market failure occurs when:

- A the quantity produced or consumed is above or below the socially optimal level
- B the market stops working altogether, so no trade in the good takes place
- C the price of a good rises beyond what most buyers can afford to pay
- D firms in the market make losses and leave it to their competitors

Answer:

2. Which of the following is NOT one of the five sources of market failure?

- A a firm holding a large share of its market
- B the free-rider problem and non-provision of public goods
- C moral hazard
- D speculation and market bubbles

Answer:

3. On a diagram of an external cost of production, what does the area between MPC and MSC, from zero to the market quantity, measure?

- A the total external cost that third parties bear
- B the welfare loss from making too much
- C the producer's total private cost
- D the gain from moving to the socially optimal quantity

Answer:

4. The free-rider problem arises because a public good is:

- A non-rival
- B non-excludable
- C expensive to provide
- D useful to everybody

Answer:

5. Two parties who both know very little about a good have information that is:

- A asymmetric
- B symmetric
- C complete
- D perfect

Answer:

6. A market bubble is best described as a situation in which:

- A the price of an asset is unusually high
- B the rise in price has become the main reason to buy
- C buyers have borrowed heavily to make purchases
- D a market has too few sellers in it

Answer:

DEFINE Task 2 — The meaning of an external cost

2 marks

Define the term external cost.

external cost

How is social cost different from external cost? (practice, not marked)

EXPLAIN Task 3 — Fire insurance at a bakery in Tarno

4 marks

A bakery in Tarno pays to have its ovens checked for fire risk every month. This year it buys fire insurance for the first time. The insurer will pay most of the cost of any fire. It charges every bakery in Tarno the same premium.

Explain how the fire insurance may lead to moral hazard at the bakery.

CLASSIFY Task 4 — Eight effects in the town of Sarel

8 marks

In Sarel, a small town, each effect below falls on third parties.

Classify each effect as one kind of externality from the key.

Key: External cost of production · External benefit of production · External cost of consumption · External benefit of consumption

#	What happens	Kind of externality
1	Smoke from a sugar factory leaves black dust on the cars parked in the street next to it	
2	Parents have their children vaccinated against measles, and their classmates are less likely to catch it	
3	A farmer keeps bees to sell their honey, and the bees help the fruit trees on the next farm to grow more fruit	
4	Drivers sound their car horns in a traffic jam late at night, and families nearby cannot sleep	
5	A quarry blasts rock to sell as stone, and the blasts crack the walls of houses nearby	
6	A family uses its own fire extinguisher to stop a fire before it spreads to the flat next door	
7	A family heats its home with a wood stove, and the smoke drifts into the rooms of the house next door	
8	A firm trains its own staff to repair machines, and some of them later work for other firms in the town	

CALCULATE Task 5 — A cloth factory and the river below it

4 marks

A cloth factory in Rena pours its waste water into a river. The waste harms fishers downstream by \$6 for every roll of cloth made, at every quantity. Using the cloth harms nobody. The market makes 70 rolls a day. The social optimum is 60 rolls a day. The MPB and MPC curves are straight lines.

Calculate the total external cost and the welfare loss in the market for cloth each day.

Total external cost (\$ a day)

Workings

Answer: \$

Welfare loss (\$ a day)

Workings

Answer: \$

ANALYSE

Task 6 — Land by the coast at Pava

6 marks

In 2024, a new port opened at Pava, and the price of land by the coast rose by 20%. Many buyers now buy land there only to sell it again later for more.

Analyse how speculation may lead to a market bubble in land by the coast at Pava.

Knowledge — what speculation and a market bubble are (2)

Application — use two facts about Pava (2)

Analysis — your chain of reasoning (2)

DRAW**Task 7 — A diagram of the market for flu vaccinations****4 marks**

In Selo, a person who has a flu vaccination is less likely to pass flu to the people around them. These people pay nothing for this protection. Giving vaccinations harms nobody.

Draw a marginal analysis diagram that shows the welfare gain area in Selo's market for flu vaccinations.

CALCULATE**Task 8 — The benefit of an evening course in Bovan****4 marks**

Nadia, a worker in Bovan, pays for an evening course in accounting. The course will raise her own wages by \$300 a year. Her new skills will also help the people she works with. That help is worth \$100 a year to them, and they pay nothing for it.

Calculate the external benefit of the course as a percentage of its social benefit.

Step 1: the social benefit (\$ a year)

Workings

Answer: \$**Step 2: the external benefit as a percentage of the social benefit (%)**

Workings

Answer: %

EXPLAIN Task 9 — Scans at a private clinic in Rovi

4 marks

A private clinic in Rovi earns a fee for every scan it gives. Its doctors advise a scan for most patients with back pain. Patients cannot judge whether they need one.

Explain why imperfect market information may lead patients at the clinic to buy more scans than the social optimum.

EXPLAIN Task 10 — An expected rescue for banks in Marenta

4 marks

Last year, the government of Marenta rescued a large bank that had failed. Banks in Marenta now expect that the government would rescue them too if they failed.

Explain one likely impact of this expected rescue on the government of Marenta.

EXPLAIN Task 11 — The harbour lights at Port Ilo

4 marks

Lights on the harbour wall at Port Ilo guide boats into the harbour at night. Every boat that comes near can see the lights, whether or not its owner has paid towards them.

Explain why the harbour lights are a public good.

Source: Brick kilns and flats in Ostara

- 1 Ostara is a city that is growing fast. About 40 kilns, ovens that bake clay bricks, stand at its edge. Their smoke drifts over the farms and villages nearby. Farmers say that their crops grow less well. Doctors report more coughing among children in the villages. Some of the smoke crosses the border into Kelda, a neighbouring country. Nobody pays the farms or the villages for this harm.
- 2 In 2025, a study for the city council measured the harm at about \$8 for every 1,000 bricks made, at every quantity. Using the bricks harms nobody. The study did not count the harm in Kelda. Doctors

say that the coughing may harm the children's health for many years. Figure 1 shows the market for bricks.

- 3 Most of the bricks are sold to firms that build flats. Flat prices in Ostara rose by 40% between 2023 and 2025. Ostara has more families than before, but many buyers now say that they buy flats only to sell them again for more. Most buyers borrow most of the price. Building firms started twice as many flats in 2025 as in 2023. A flat takes about two years to build.

Figure 1: Ostara's market for bricks, 2025

Position	Bricks made a day (thousands)
Market position (MPB = MPC)	500
Social optimum position (MSB = MSC)	450

CALCULATE Task 12 – The external cost of the smoke measured by the study

2 marks

Using Figure 1 and paragraph 2, calculate the external cost of the smoke each day at the market position, as measured by the study.

External cost, as measured by the study (\$ a day)

Workings

Answer: \$

EXPLAIN Task 13 – Too many bricks in Ostara

4 marks

Explain why the market for bricks in Ostara produces more bricks than the social optimum (paragraph 1).

ANALYSE**Task 14 — The welfare loss in the market for bricks**

6 marks

With reference to Figure 1, analyse the welfare loss in the market for bricks in Ostara. Assume the curves are straight lines.

Knowledge — what a welfare loss is, and where it lies on a marginal analysis diagram: describe the area in words or draw the diagram (2)

Application — use Figure 1 and the cost of the smoke in paragraph 2 (2)

Analysis — your chain of reasoning (2)

EXAMINE**Task 15 — Measuring the external cost of the smoke**

8 marks

With reference to paragraphs 1 and 2, examine why the external cost of the smoke may be hard to measure.

Knowledge — what an external cost is, and why its size matters (2)

Application — use two facts from paragraphs 1 and 2 (2)

Analysis — one chain of reasoning for each of the two facts you used (2)

Evaluation — say how much the difficulty matters (2)

DISCUSS Task 16 — A fall in flat prices in Ostara

14 marks

With reference to paragraph 3, discuss the likely effects on producers and workers in Ostara if flat prices fall sharply.

Knowledge — explain speculation, and what happens when a market bubble bursts (2)

Application — use two facts from paragraph 3 (2)

Analysis — two chains of reasoning, one for producers and one for workers (4)

Evaluation — weigh the effects, say what they depend on, and judge (6)

EVALUATE Task 17 — A storm wall for the coast of Velta

20 marks

"A storm wall along the coast of Velta would protect 6,000 homes and one large hotel from the sea. A building firm will build the wall if the people it protects pay enough in total."

Evaluate whether the private sector will provide the storm wall.

Knowledge — define a public good, and explain why people may not pay for one (3)

Application — apply these ideas to the storm wall in Velta (3)

Analysis — one chain on why the wall may not be built, and one on why it may be (6)

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Write the one sentence that answers Task 17's question.



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